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PATENT ABSTRACTS OF JAPAN

(11)Publication number : **07-049725**
(43)Date of publication of application : **21.02.1995**

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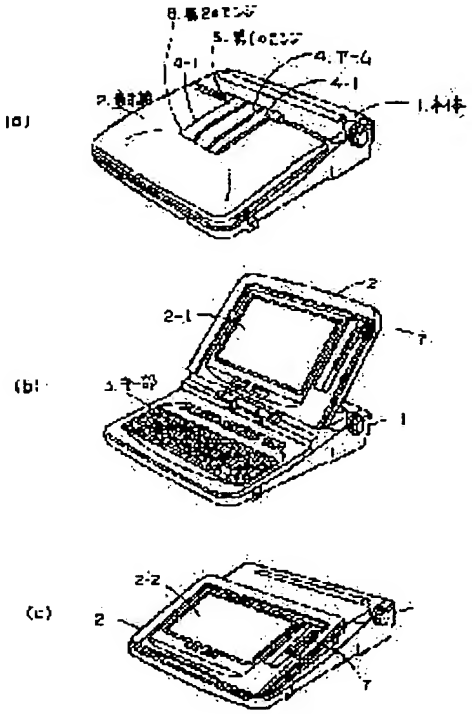
(21)Application number : **05-196195**
(22)Date of filing : **06.08.1993**

(71)Applicant : **SHARP CORP**
(72)Inventor : **YAMADA SATOSHI**

(54) INFORMATION PROCESSOR

(57)Abstract:
PURPOSE: To surely hold the engaging state of a cover at the time of key entry and to easily attain movement to pen input in the case of unitedly integrating a key entry display part and a tablet on the inner surface of a cover in an information processor.
CONSTITUTION: The processor 1 and the rear center of a display part 2 are connected so as to be optionally rotated by the 1st and 2nd hinges 5, 6 and the 1st and 2nd arms 4, 4-1, the display part 2 is locked in a key entry state, and in a pen input state, the display part 2 is unlocked and the 1st and 2nd arms 4, 4-1 are moved in parallel.



LEGAL STATUS

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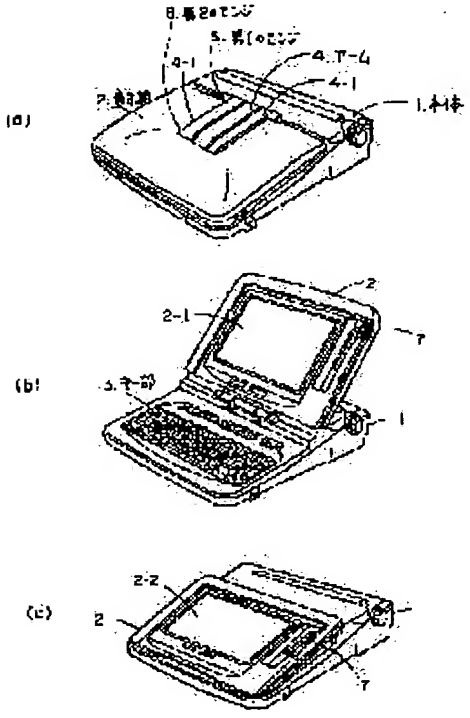

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1.This document has been translated by computer. So the translation may not reflect the original precisely.

2.**** shows the word which can not be translated.

3.In the drawings, any words are not translated.

CLAIMS

[Claim(s)]

[Claim 1] By the same screen it was made to lap on the key section characterized by providing the following By the 2nd hinge formed in the 1st hinge which has the display which has a tablet

function and also enabled the pen input with the key input display, and was formed in the main part, and the center of a tooth back of a display, the 1st between these, and the 2nd arm The receipt state which join together so that a main part and a display can be rotated, and the screen and the key section of a display are made to counter, An information processor with the tri-state in the operation state of keying to an operator side by arranging the key section while looking at the screen ahead of an operator, and the operation state of moving the screen on the key section and performing a pen input from the tablet of the screen The 1st arm which shifts the attaching position of a cross direction at the tooth back of the center of a display, and draws the 1st locus on it to the main part of an information processor The locus from a receipt state to [has the 2nd arm describing the 2nd locus parallel to this, and] a key input operation state The lock mechanism which switches the locus from a key input operation state to a pen alter operation state

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Industrial Application] This inventions are the information processor of short forms, such as a personal computer, a word processor, etc. with which it has the input means of a key input and a pen input, and both display meanses are formed inside the lid of the key section, and a thing concerning the attachment mechanism of the display and main part especially.
[0002]
[Description of the Prior Art] As an input means in the conventional short form information processor, although the key input was in use, the technology of a pen input with the tablet for a coordinate input united with the display was developed, and a handwriting character input with a pen, an image input, and handwriting edit also became realizable. Moreover, the key section is united with a wrap lid and it is made for a display to lap on the key section in the state of receipt. In addition, the case where it is prepared in front reverse side both sides of a lid, and both may have piled up inside the lid in the key input (for example, a display like a liquid crystal display and a tablet side).
[0003] As for the standard posture of the operation at the time of a key input, generally it is desirable to arrange a display in the face of an operator, to arrange a key to this side, and to perform touch typing, and the need of turning on a desk the tablet side which it is more desirable to use a pen and is the screen, and arranging it is searched for so that the standard posture of the operation at the time of a pen input may write a character toward the paper on a desk.
[0004] And there is the following as an example in which the display in a key input is prepared in front reverse side both sides of a lid.
[0005] (1) The 1st hinge mechanism opens the outer frame of a display from the key section to the upper part, and the method of reversing 180 degrees of screens is indicated by the open patent official report common 4-188213 by rotating a display to an outer frame according to the 2nd hinge mechanism.
[0006] (2) The method of making a open patent official report common 4-188214 reverse 180 degrees of screens by the first hinge mechanism's opening a display from the key section to the upper part, and rotating the root of a display horizontally by the 2nd hinge mechanism is indicated.
[0007] In addition, conversion of the display address accompanying screen reversal is also

indicated by this.
[0008] (3) Two or more arms of the side open a display from the key section to the upper part, and the method of turning over and carrying the screen on the key section is indicated by the open patent official report common 4-218820.
[0009] Since the display for a tablet and a key input is prepared in both sides of a lid, all need to turn the screen over according to a busy condition.
[0010] As an example in which the display and tablet of a case of a key input are prepared inside the lid at one, there is a word processor concerning manufacturing and selling of these people. It attaches in the main part corresponding to the base of a lid free [rotation of an arm] with the 1st hinge, the outside of a lid attaches the nose of cam of an arm in the center free [rotation] with the 2nd hinge mostly, and it enables it to have engaged with the outside of a lid the arm which counters this with the engagement equipment by irregularity in this. The case of a key input can make an arm able to engage with a lid, can open a lid, and can see the display inside a lid. As once open a lid in a pen input and it removes engagement, it lengthens a lid to an operator side so that the inside of a lid may turn to a top, and it laps on the key section, it can be considered as arrangement suitable for the pen input.
[0011]
[Problem(s) to be Solved by the Invention] However, the need of move tracing of the display from a key input gestalt to a pen input gestalt becoming large in order to rotate the screen, and being unable to maintain the same work posture, and also switching the data coordinate of a display and a tablet according to each state generates the method currently indicated by the open patent official report of the above-mentioned (1) and (2).
[0012] Although the structure of (3) has small move tracing from a key input gestalt to a tablet input gestalt, documents, writing implements, etc. which two or more arms are arranged at the side of a display, and arrange horizontally between each other arms may be caught, and there is a fault which is easy to break.
[0013] Moreover, there is also a fault which a key stroke stops being able to perform easily by preparing an arm beside a key.
[0014] It is made to like all not much and they cannot say appearance as a thing. The method currently used for these people's product has unstable engagement of a lid and an arm, although there is no above-mentioned fault.
[0015] When the display and tablet of a key input are prepared in the inside of the lid of an information processor at one, the purpose of this invention is to ensure the engagement state of the lid in a key input, and close movement to a pen input, if easy.
[0016]
[Means for Solving the Problem] It joins together so that a main part and the center of a tooth back of a display can be rotated by the 2nd hinge formed in the 1st hinge formed in the main part, and the center of a tooth back of a display in the information processor of this invention, and two or more arms between these. The attaching position in the display central tooth back of these arms is shifted by the cross direction. One arm drew the 1st tracing, and the arm of another side drew the 2nd tracing parallel to the 1st tracing, and it established the lock mechanism which switches tracing from the receipt state of an information processor to a key input operation state, and tracing from a key input operation state to a pen alter operation state.
[0017]
[Function] According to this invention, in the display state of a key input, the 1st arm and 2nd arm receive horizontally, lap, and can lock a display to a main part. When making it a pen input,

a lock mechanism is canceled, and a display can be easily moved to the upper surface of the key section.

[0018]

[Example] Drawing 1 (a), (b), and (c) are the perspective diagrams showing change of the state of the display of the information processor of this invention, respectively. In (a), the state at the time of display receipt and (b) show the state at the time of key input operation, and (c) shows the state at the time of a pen input.

[0019] The display 2 which makes a lid serve a double purpose piles up above the key section 3 of the main part 1 of an information processor. It is combined by the 2nd hinge 6, and the tooth-back center section of the display 2, the 1st arm 4 and the 2nd arm 4-1, and 4-1 open by combining a main part 1, the 1st arm 4 and the 2nd arm 4-1 of the both sides, and 4-1 by the 1st hinge 5 and close a display 2, and the screen of a display 2 is turned up, and it can pile up on the key section 3.

[0020] If a display 2 is opened from a main part 1, it will be in the state of drawing 1 (b) from the state of drawing 1 (a), and the input of the key section 3 is attained, looking at the key input screen 2-1 of a display 2.

[0021] A pen input is attained with the pen 7 which the display 2 moved so that the screen might turn up, if the state of drawing 1 (b) to the display 2 was lengthened to the front, and changed into the state of drawing 1 (c), was switched on the key section 3 by the tablet 2-2 for a pen input in a display 2, moved, and was formed in one side of a display 2.

[0022] In the state of drawing 1 (a), the receipt state of (b), and the key input, if an arm 4 and 4-1 are seen from the side, they have lapped. In addition, in the state of (b), an arm 4 and 4-1 are locked by the lock mechanism of the 1st below-mentioned hinge 5.

[0023] Drawing 2 is the perspective diagram of the tooth back of the information processor in which the move progress to (c) from this drawing 1 (b) is shown. The movement of 4-1 describing the arm 4 describing the 1st tracing and the 2nd tracing is shown. In this state, if it sees from the side, the arm 4 and the arm 4-1 are parallel. Therefore, each attaching position has shifted to the cross direction of a main part 1 or a display 2, and when moving from the state of a key input display to a pen input state, the relation between the 1st hinge 5, the 2nd hinge 6, an arm 4, and 4-1 will become a parallelogram if it sees from the side.

[0024] Drawing 3 (a) and (b) are the important section side elevations of one example of the lock mechanism prepared in the 1st hinge 5. Drawing 3 (a) is in a receipt state, and (b) is in the state of a key input.

[0025] The lock board 12 which has the below-mentioned slot 18 is attached in the overhang section 13 of the method of the right of the angle 11 fixed to some main parts free [rotation] with the shaft 17. The end of a guide pin 19 gets into a slot 18, and it slides on it along the lump slot 18. The other end of a guide pin 19 was supported so that it could rotate in the suitable place of a main part 1, and it has pulled some lock boards 12 with the spring 20.

[0026] A shaft 14 is attached in the overhang section 13-1 of the left of an angle 11 free [rotation], and the arm 4 and the end of 4-1 are attached in the shafts 15 and 16 prepared in the lobe of the periphery of a shaft 14 free [rotation].

[0027] Drawing 4 (a) is the plan showing the configuration of the slot 18 established in the lock board 12, state [of the nose of cam of the guide pin 19 which has got into the slot 18] ** - **, and is a graph which shows the height of the slot 18 in each state of drawing 4 (b) ** - **. 20-1 is a salient which stops the end of a spring 20.

[0028] Drawing 5 (a) and (b) are the expansion side elevations in each state of lock release of the

lock board 12 and the completion of a lock.
[0029] The position at the nose of cam of the guide pin 19 in the state where of the display 2 of the lock release state of the lock mechanism of drawing 3 (a) was closed serves as a place of ** of drawing 4 (a), and ** of drawing 4 (b), and it becomes the situation shown by drawing 5 (a), and the position at the nose of cam of the guide pin 19 of the completion state of a lock of a lock mechanism serves as a place of ** of drawing 4 (a), and ** of drawing 4 (
[0030] If a display 2 is moved to an operator side when making it a pen input, the nose of cam of a guide pin 19 will become the position of drawing 4 (a) **, and if a display 2 is moved caudad next, the nose of cam of a guide pin 19 will serve as a position of drawing 4 (a) **. This is in the state of drawing 1 (c).
[0031] As mentioned above, by moving a display 2 and performing for the first time in [of the lock board 12 / a neck], it becomes possible to be fixed or to be canceled and this lock mechanism can realize lock release of drawing 3 (a), and the completion state of a lock of drawing 3 (b).
[0032] In drawing 3 (b), the lock mechanism is being fixed in the state of the key input display, and two arms lap horizontally. However, since the lock mechanism is canceled by rotating a display 2 when shifting to the pen input state of drawing 1 (c) from the key input display of drawing 1 (b), an arm 4 and 4-1 can be moved freely, and it becomes possible to move a display position freely.
[0033] In addition, as for wrapping in a tube, this arm 4 and 4-1 are also possible, and its safety improves, without inserting other objects from the outside between each arm in this case.
[0034]
[Effect of the Invention] Though it is a compact receipt gestalt, while according to this invention arranging equipment on a desk, opening the lid of display combination simply from a receipt state with the posture of an input in which a seat was taken for operation and enabling key input operation, a tablet input is also attained by lengthening the lower part of the screen to the front with the same posture.
[0035] Therefore, the easy change of a key input and a pen input is enabled quickly, and it can cancel inconvenient [which the change to each other alter operation takes]. Moreover, appearance also becomes desirable.

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２を回動することによりロック機構は解除されているためアーム４，４－１は自由に動くことができ、表示位置を自由に移動することが可能となる。

【００３３】なお、このアーム４，４－１はチューブで包むことも可能であり、この場合は各アームの間に外部から他の物を挟むこともなく、安全性が向上する。

【００３４】

【発明の効果】本発明によれば、コンパクトな収納形態でありながら装置を机上に配置し、操作のために着席した入力作業の姿勢のままで、収納状態から表示部兼用の蓋を簡単に開き、キー入力操作を可能にすると同時に、同じ姿勢で表示面の下部を手前に引くことでタブレット入力も可能になる。

【００３５】そのため、キー入力とペン入力の容易な切換えを素早く可能にし、お互いの入力操作への切換えに要する不便さを解消できる。また外観も好ましくなる。

【図面の簡単な説明】

【図１】（ａ），（ｂ）および（ｃ）は、それぞれ、本発明の装置の表示部の状態の変化を示す斜視図である。

【図２】本発明の装置の背面の斜視図である。

【図３】（ａ）は表示部を閉じた状態のロック機構の要部側面図であり、（ｂ）はキー入力状態で表示部がロックされている場合の要部側面図である。

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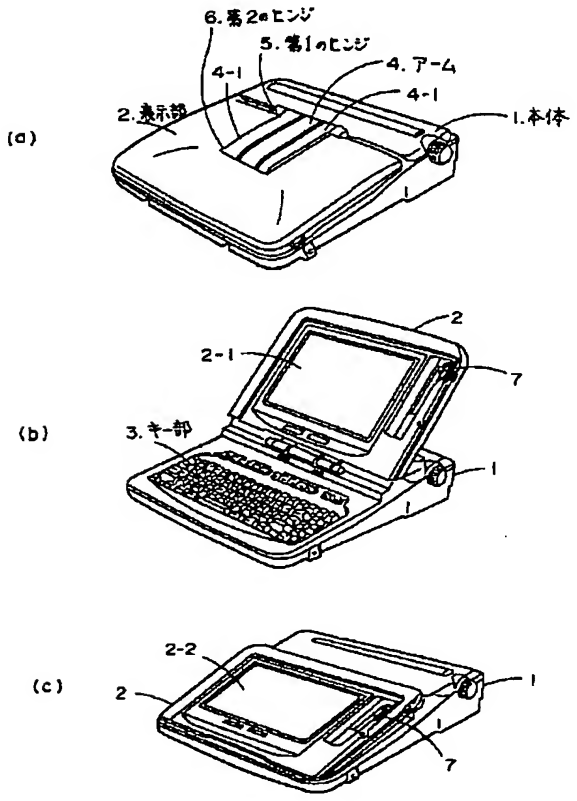
【図４】（ａ）は溝の形状とガイドピンの先端の状態を示す側面図であり、（ｂ）は溝の高さを示すグラフである。

【図５】（ａ）はロック解除状態におけるロック板とガイドピンの関係を示す側面図であり、（ｂ）はロック完了状態のロック板とガイドピンの関係を示す側面図である。

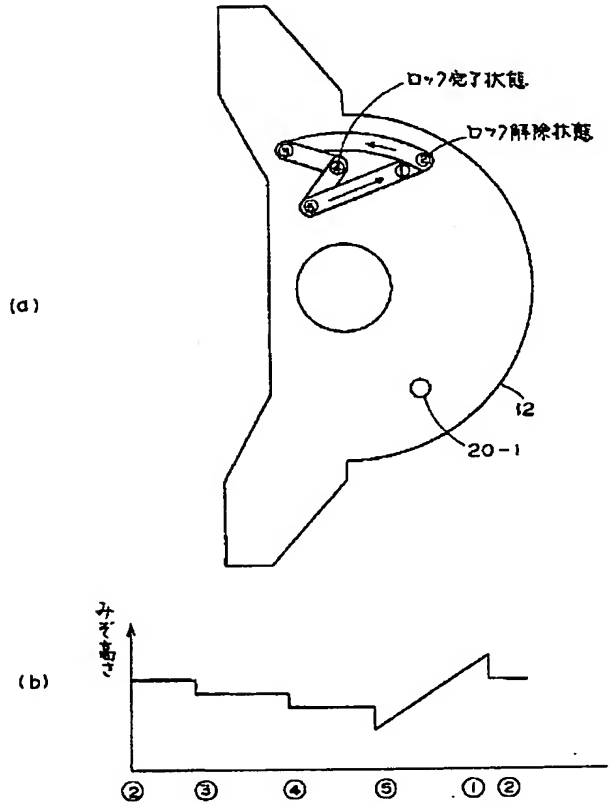
【符号の説明】

１　本体
２　表示部
３　キー部
４，４－１　アーム
５　第１のヒンジ
６　第２のヒンジ
７　ペン
１１　アングル
１２　ロック板
１３，１３－１　張出部
１４，１５，１６，１７　軸
１８　溝
１９　ガイドピン
２０　バネ

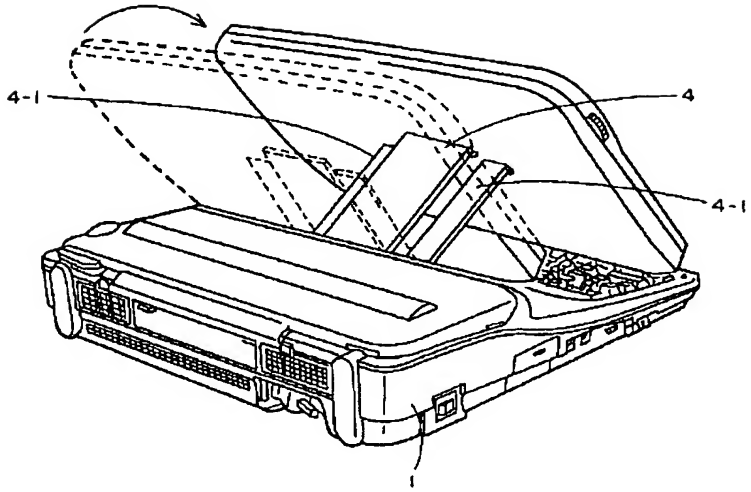
【図１】



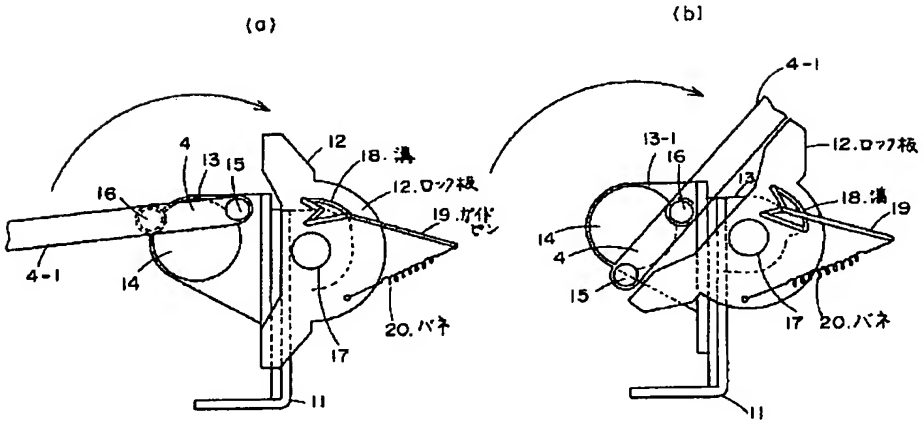
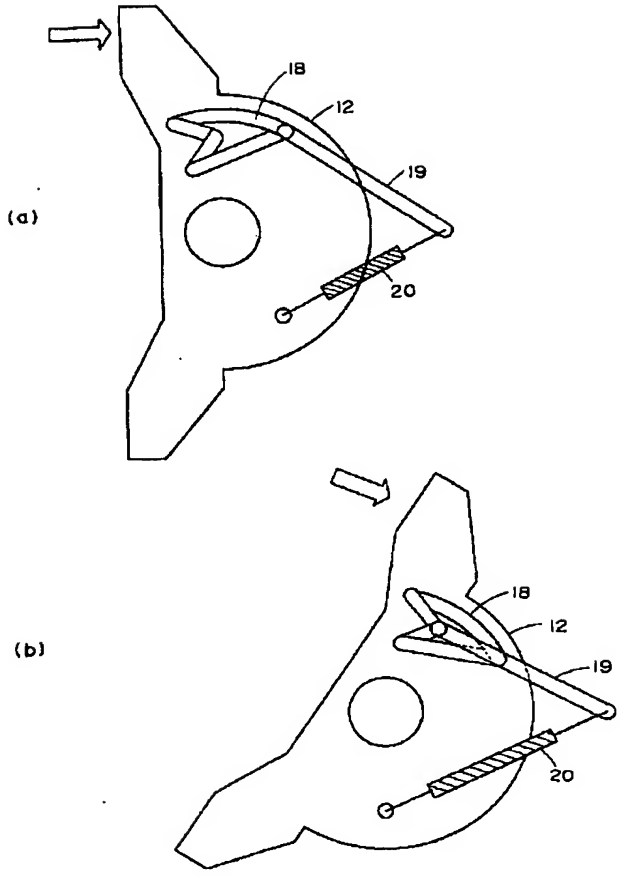
【図４】



【図２】


4-1
4
4-1
1

【図３】


(a)
(b)
4-1
16
4
13
15
12
18.溝
12.ロック板
19.ガイドピン
14
17
20.バネ
11
13-1
12.ロック板
18.溝
19

【図５】